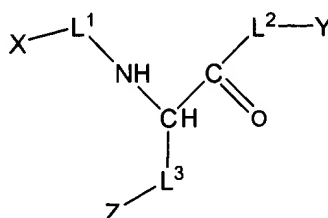


This listing of claims will replace all prior versions and listings of claims in the application.

Listing of Claims:

- 1 1. (Currently Amended) A heterofunctional crosslinking reagent having
2 the formula:



3 wherein

4 L¹ ~~[[,]]~~ **and** L² ~~and L³~~ are each independently selected from the group consisting of a
5 bond, a substituted or unsubstituted (C₂-C₂₄) alkylene group, a substituted or
6 unsubstituted (C₂-C₂₄) heteroalkylene group, a polyethyleneglycol group, a
7 polyalcohol group, a polyamine group, a polyester group and a
8 polyphosphodiester group;

9 **-L³-Z is an optionally protected amino acid side chain selected from the group**
10 **consisting of lysine side chain, cysteine side chain, serine side chain,**
11 **aspartic acid side chain, glutamic acid side chain, and threonine side**
12 **chain;**

13 X is a non-covalent protein tag binder that specifically binds to a protein tag portion
14 of a protein; **and**

15 Y is a photoactivatable covalent crosslinking group adapted to covalently link the
16 heterofunctional crosslinking reagent at or adjacent to said protein tag, **said**
17 **said photoactivatable covalent crosslinking group is a member selected**
18 **from the group consisting of aryl ketones, azides, diazo compounds,**
19 **diazirenes, and ketenes;** ~~and~~

~~Z is a protected or unprotected chemical crosslinking group that covalently links the heterofunctional crosslinking reagent to a label or support wherein Z is rendered inactive when protected.~~

2.-4. (Canceled)

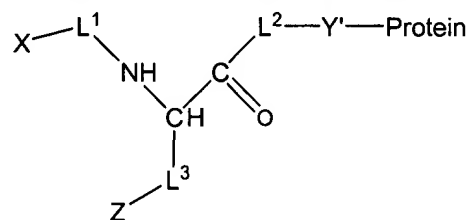
5. (Original) A heterofunctional crosslinking reagent of claim 1, wherein L¹ is a cleavable linking group.

6.-8. (Canceled)

9. (Original) A heterofunctional crosslinking reagent of claim 1, wherein X is selected from the group consisting of metal chelating groups, peptides, an organoarsenical moiety and small molecule ligands or inhibitors.

10.-25. (Canceled)

26. (Currently Amended) A protein conjugate comprising a protein and a heterofunctional crosslinking reagent, said conjugate having the formula:



wherein

L^1 [[,]] and L^2 ~~and~~ L^3 are each independently selected from the group consisting of a bond, a substituted or unsubstituted (C_2 - C_{24}) alkylene group, a substituted or unsubstituted (C_2 - C_{24}) heteroalkylene group, a polyethyleneglycol group, a polyalcohol group, a polyamine group, a polyester group and a polyphosphodiester group;

-L³-Z is an optionally protected amino acid side chain selected from the group consisting of lysine side chain, cysteine side chain, serine side chain, aspartic acid side chain, glutamic acid side chain, and threonine side chain;

13 X is a non-covalent protein tag binder that specifically binds to a protein tag portion
14 of a protein; **and**

15 Y' is the residue of a photoactivatable covalent crosslinking group after formation of a
16 covalent linkage to said protein, said photoactivatable covalent crosslinking
17 group covalently attached at or adjacent to said protein tag, **said**
18 **photoactivatable covalent crosslinking group is a member selected from**
19 **the group consisting of aryl ketones, azides, diazo compounds, diazirenes,**
20 **and ketenes; and**

21 ~~Z is a protected or unprotected chemical crosslinking group that covalently links~~
22 ~~the heterofunctional crosslinking reagent to a label or support wherein Z~~
23 ~~is rendered inactive when protected.~~

1 27. (Original) A protein-conjugate comprising a protein and a covalently
2 attached heterofunctional linking group of claim 1.

1 28.-77. (Canceled)

1 78. (Previously presented) A heterofunctional crosslinking reagent of
2 claim 1, wherein X is an antibody or antibody fragment.